

REMARKS

INTRODUCTION

In accordance with the foregoing, claims 1, 4, 7 and 11 have been amended. Claims 15-18 have been cancelled. Claims 1-14 are pending and under consideration.

CLAIM OBJECTIONS

Claims 1-14 were objected to because of informalities. Appropriate correction has been made to claims 1, 4, 7 and 11. Specifically, EDID was defined in each of the independent claims of the application.

Withdrawal of the foregoing rejection is requested.

CLAIM REJECTIONS

Claims 1-18 were rejected under 35 USC 103(a) as being unpatentable over Nguyen (US 6,839,055) (hereinafter "Nguyen") in view of Nolan et al. (US 6,049,316) (hereinafter "Nolan").

Nguyen discusses video data error detection. In Nguyen, controller 129 transmits the error indication to video controller circuitry 109 with display system information regarding display system 105. The display system information is transmitted to video controller circuitry 109 in an Extended Display Identification Data (EDID) structure. The EDID structure is at least 128 bytes long and contains information regarding display system 105 such as vendor/product information, EDID structure version, basic display parameters/features, color characteristics, and timing information. The EDID structure is initially stored in EDID EPROM 131. Controller 129 accesses EDID EPROM 131 to obtain the EDID structure to provide the information to video controller circuitry 109. Controller 129 provides the EDID structure to video controller circuitry 109 during a startup sequence of display system 105 or in response to a request from video control circuitry 109 during startup. Controller 129 places the error indication (e.g., a checksum) from error detector 127 in the "week of manufacture" field (10 h) or the "year of manufacture" field (11 h) of the EDID structure. With other systems, the error indication is placed in optional extension blocks at the end of the EDID structure as indicated by the extension flag byte field (7Eh). Nguyen, 3:56-4:14 and Figure 1.

Nolan discusses a PC with multiple video-display refresh-rate configurations using active and default registers. In Nolan, when CRT 26 is a newer monitor capable of supporting plug-and-play, and portable PC 20 also has plug-and-play hardware and software, the auto-configuration uses the Plug-and-Play method. On system initialization, portable PC sends out a

series of clock signals on the 15-pin VGA cable to CRT 26, and CRT 26 responds by transmitting back to portable PC 20 a 128-byte data structure called the extended display identification data (EDID). The EDID contains information about the configurations and refresh rates supported by CRT 26. Nolan, 6:8-6:20 and Figure 4.

Further in Nolan, software in portable PC 20 reads the configuration information in the 128-byte EDID and calculates the minimum and maximum vertical refresh rates 14, 16. From rates 14, 16 and the current resolution desired by the user, and the capabilities of the graphics controller hardware, the active refresh rate can be calculated or selected and written into active register 11. Thus the correct refresh rate is programmed in the timing registers when both portable PC 20 and CRT 26 have hardware and/or software to support auto-configuration of monitors using plug-and-play. Nolan, 6:22-6:32 and Figure 4.

Still further in Nolan, when CRT 26 is an older "legacy" monitor that is not capable of supporting plug-and-play, then auto-configuration uses default refresh-rate registers 30 rather than the Plug-and-Play method. On system initialization, portable PC first sends out a series of clock signals on the 15-pin VGA cable to CRT 26, but CRT 26 does not respond with the EDID since CRT 26 is not Plug-and-Play compatible. On detecting that no EDID is received, portable PC 20 determines that Plug-and-Play configuration is not possible with the monitor currently attached. Nolan, 6:33-6:42 and Figure 4.

In Nolan, portable PC 20 then reads default refresh-rate registers 30 to set active register 11 and program the timing registers accordingly. Default refresh-rate registers 30 contain three values, for the three popular resolutions: VGA 640 x 480, SVGA 800 x 600, and XGA 1024 x 768. Portable PC 20 reads the resolution key in the Windows 95 registry, or reads the system. ini file for Windows 3.1, to determine the last resolution set by the user. This resolution is used to select the corresponding refresh-rate parameter from default refresh-rate register 30. The selected parameter for the refresh rate is written to active register 11, setting the active refresh rate to the default value for the current resolution. Thus the active refresh rate is written into active register 11 either by the Plug-and-Play software, from the minimum and maximum vertical refresh rates 14, 16 calculated from the EDID read from CRT 26, or from default refresh-rate registers 30 for legacy CRT's that do not provide the EDID. Nolan, 6:43-6:59 and Figure 6.

Claims 1-3

Amended claim 1 recites: "...processing the input video signal according to the display information stored in the main body and supplying the processed video signal to the monitor if the error signal is supplied to the computer main body." As stated in the Office Action, Nguyen

does not discuss this feature of claim 1. However, Nolan does not cure this deficiency in Nguyen. In contrast to claim 1, Nolan does not discuss supplying a processed video signal to the monitor if the error signal is supplied to the computer main body. In Nolan, the auto configuration does not operate in response to an error signal as recited in claim 1. Further, error signals are not discussed at all in Nolan.

The technical feature of claim 1 of supplying a processed video signal to the monitor if an error signal is supplied to the computer main body is directed to solving the problem of when the resolution is changed through a resolution control menu of a control panel, and exceeds the resolution range the monitor can supply, a normal picture cannot be displayed on the screen of the monitor. The conventional solution is that the resolution the monitor supports is transmitted to the computer main body, so that the video card driver reads EDID of the monitor connected to the computer main body and only the resolution the monitor supports is selected. However, each manufacturer of the video card driver and monitor establishes the highest resolution supported differently, causing a problem that a resolution the monitor does not support can be selected. Nolan discusses this conventional technique in that software in portable PC 20 reads the configuration information EDID, calculates the refresh rates 14, 16, and from the rates 14, 16 and the current resolution desired by the user, calculates the active refresh rate for the active register 11. By contrast, in claim 1, a video signal is automatically reset if a display information is optionally changed that is not suitable for EDID of a monitor as indicated by the error signal. In the method of claim 1, an image can be displayed if a monitor unavailable to support a high resolution is connected to a system having a high resolution. The system of Nolan only differentiates between plug-and-play CRTs and legacy CRT's, not if the wrong information is transmitted from the monitor to the computer main body so that the resolution selected that is supposed to be supported may actually not be supported. As such, it is respectfully submitted that claim 1 patentably distinguishes over Nguyen and Nolan.

Claims 2 and 3 depend on claim 1 and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 4-6

Amended claim 4 recites: "...calculating a display information set-up value lower than the display information if the error signal is supplied to the computer main body; and processing the input video signal according to the set-up value and supplying the processed video signal to the monitor." As stated in the Office Action, Nguyen does not discuss these features of claim 4.

However, Nolan does not cure this deficiency in Nguyen. In contrast to claim 4, Nolan does not discuss calculating a display information set-up value lower than the display information if the error signal is supplied to the computer main body. In Nolan, the auto configuration does not operate in response to an error signal as recited in claim 4. Further, error signals are not discussed at all in Nolan.

These technical features of claim 4 of calculating a display information set-up value lower than the display information if an error signal is supplied to the computer and processing the video signal according to the set-up value and supplying the processed video signal to the monitor are directed to solving the problem of when the resolution is changed through a resolution control menu of a control panel, and exceeds the resolution range the monitor can supply, a normal picture cannot be displayed on the screen of the monitor. The conventional solution is that the resolution the monitor supports is transmitted to the computer main body, so that the video card driver reads EDID of the monitor connected to the computer main body and only the resolution the monitor supports is selected. However, each manufacturer of the video card driver and monitor establishes the highest resolution supported differently, causing a problem that a resolution the monitor does not support can be selected. Nolan discusses this conventional technique in that software in portable PC 20 reads the configuration information EDID, calculates the refresh rates 14, 16, and from the rates 14, 16 and the current resolution desired by the user, calculates the active refresh rate for the active register 11. By contrast, in claim 4, a video signal is processed if a display information is optionally changed that is not suitable for EDID of a monitor as indicated by the error signal. In the method of claim 4, an image can be displayed if a monitor unavailable to support a high resolution is connected to a system having a high resolution. The system of Nolan only differentiates between plug-and-play CRTs and legacy CRT's, not if the wrong information is transmitted from the monitor to the computer main body so that the resolution selected that is supposed to be supported may actually not be supported. As such, it is respectfully submitted that claim 4 patentably distinguishes over Nguyen and Nolan.

Claims 5 and 6 depend on claim 4 and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 7-10

Amended claim 7 recites: "...the display information is based on the EDID and processing the input video signal according to the display information stored in the display

information storing part and to supply the processed video signal to the monitor if the error signal is supplied from the display control part.” As stated in the Office Action, Nguyen does not discuss these features of claim 7. However, Nolan does not cure this deficiency in Nguyen. In contrast to claim 7, Nolan does not discuss that the processed video signal is supplied to the monitor if the error signal is supplied from the display control part. In Nolan, the auto configuration does not operate in response to an error signal as recited in claim 7. Further, error signals are not discussed at all in Nolan.

The technical features of claim 7 where the display information is based on the EDID and processing the input video signal according to the display information and supplying the processed video signal to the monitor in the event of an error signal are directed to solving the problem of when the resolution is changed through a resolution control menu of a control panel, and exceeds the resolution range the monitor can supply, a normal picture cannot be displayed on the screen of the monitor. The conventional solution is that the resolution the monitor supports is transmitted to the computer main body, so that the video card driver reads EDID of the monitor connected to the computer main body and only the resolution the monitor supports is selected. However, each manufacturer of the video card driver and monitor establishes the highest resolution supported differently, causing a problem that a resolution the monitor does not support can be selected. Nolan discusses this conventional technique in that software in portable PC 20 reads the configuration information EDID, calculates the refresh rates 14, 16, and from the rates 14, 16 and the current resolution desired by the user, calculates the active refresh rate for the active register 11. By contrast, in claim 7, a video signal is processed if display information is optionally changed that is not suitable for EDID of a monitor as indicated by the error signal. In the computer system of claim 7, an image can be displayed if a monitor unavailable to support a high resolution is connected to a system having a high resolution. The system of Nolan only differentiates between plug-and-play CRTs and legacy CRT's, not if the wrong information is transmitted from the monitor to the computer main body so that the resolution selected that is supposed to be supported may actually not be supported. As such, it is respectfully submitted that claim 7 patentably distinguishes over Nguyen and Nolan.

Claims 8-10 depend on claim 7 and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 11-14

Amended claim 11 recites: "...a video control part calculating a display set-up value lower than the display information transmitted, if the error signal is supplied from the display control part, processing the input video signal according to the set-up value and supplying the processed video signal to the monitor." As stated in the Office Action, Nguyen does not discuss the video control part of claim 11. However, Nolan does not cure this deficiency in Nguyen. In contrast to claim 11, Nolan does not discuss a video control part calculating a display information set-up value lower than the display information if the error signal is supplied to the computer main body. In Nolan, the auto configuration does not operate in response to an error signal as recited in claim 11. Further, error signals are not discussed at all in Nolan.

This technical feature of claim 11 of a video control part calculating a display information set-up value lower than the display information if an error signal is supplied to the computer and processing the video signal according to the set-up value and supplying the processed video signal to the monitor are directed to solving the problem of when the resolution is changed through a resolution control menu of a control panel, and exceeds the resolution range the monitor can supply, a normal picture cannot be displayed on the screen of the monitor. The conventional solution is that the resolution the monitor supports is transmitted to the computer main body, so that the video card driver reads EDID of the monitor connected to the computer main body and only the resolution the monitor supports is selected. However, each manufacturer of the video card driver and monitor establishes the highest resolution supported differently, causing a problem that a resolution the monitor does not support can be selected. Nolan discusses this conventional technique in that software in portable PC 20 reads the configuration information EDID, calculates the refresh rates 14, 16, and from the rates 14, 16 and the current resolution desired by the user, calculates the active refresh rate for the active register 11. By contrast, in claim 11, a video signal is processed if a display information is optionally changed that is not suitable for EDID of a monitor as indicated by the error signal. In the computer system of claim 11, an image can be displayed if a monitor unavailable to support a high resolution is connected to a system having a high resolution. The system of Nolan only differentiates between plug-and-play CRTs and legacy CRT's, not if the wrong information is transmitted from the monitor to the computer main body so that the resolution selected that is supposed to be supported may actually not be supported. As such, it is respectfully submitted that claim 11 patentably distinguishes over Nguyen and Nolan.

Claims 12-14 depend on claim 11 and are therefore believed to be allowable for the foregoing reasons.

Withdrawal of the foregoing rejection is requested.

Claims 15-18

Claims 15-18 have been cancelled.

CONCLUSION

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

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